

WHAT IS CLAIMED IS:

1. A compound coupling for mounting a component having a first coefficient of thermal expansion (CTE) to a support structure having a second CTE, the compound coupling comprising a first flexure coupling, a second flexure coupling, and a third flexure coupling, wherein each of said flexure coupling extends from said support structure to said component and wherein each of said flexure coupling:

- (a) is attached to said support structure at a first and a second mount point;
- (b) is attached to said component at a component mount point; and
- (c) has a flexure CTE substantially equal to said second CTE.

2. A compound coupling according to claim 1 wherein said component comprises a prism.

3. A compound coupling according to claim 2 wherein said prism is selected from a group consisting of a Philips prism and an X-prism.

4. A compound coupling according to claim 1 wherein said component comprises a lens.

5. A compound coupling according to claim 1 wherein said component comprises a detector.

6. A compound coupling according to claim 5 wherein said detector is a charge-coupled device.

7. A compound coupling according to claim 1 wherein a fastener provides attachment at said component mount points.

8. A compound coupling according to claim 1 wherein an adhesive provides attachment at said component mount points.
9. A compound coupling according to claim 1 wherein at least one flexure coupling comprises a pair of struts.
10. A compound coupling according to claim 1 wherein at least one flexure coupling is a single sheet flexure.
11. A compound coupling according to claim 1 such that a triangle is defined by said component mount point for a first flexure coupling, said component mount point for a second flexure coupling, and said component mount point for a third flexure coupling.
12. A compound coupling according to claim 11 wherein said triangle is equilateral.
13. A compound coupling according to claim 1 wherein said flexure coupling are selected from a group consisting of aluminum and stainless steel.
14. A compound coupling according to claim 1 wherein one of said flexure couplings comprises:
 - (a) a first strut extending from said first mount point to said component mount point;
 - (b) a second strut extending from said second mount point to said component mount point; and
 - (c) a third strut extending from said first mount point to said second mount point.
15. A compound coupling for mounting a component having a first coefficient of thermal expansion (CTE) at a spatial position with respect to a

support structure having a second CTE, the compound coupling comprising a first flexure coupling, a second flexure coupling, and a third flexure coupling, each of said flexure coupling extending from said support structure to said component and:

- (a) attached to said component at a first and a second component mount point assigned to said flexure coupling;
 - (b) attached to said support structure at a structure mount point assigned to said flexure coupling; and
- each said flexure coupling having a flexure CTE substantially equal to said first CTE.

16. A compound coupling according to claim 15 wherein the component comprises a prism.

17. A compound coupling according to claim 16 wherein said prism is taken from the group consisting of a Philips prism, an X-prism.

18. A compound coupling according to claim 15 wherein the component comprises a lens.

19. A compound coupling according to claim 15 wherein the component comprises a detector.

20. A compound coupling according to claim 19 wherein said detector is a charge-coupled device.

21. A compound coupling according to claim 15 wherein a fastener provides attachment at said structure mount point.

22. A compound coupling according to claim 15 wherein an adhesive provides attachment at said structure mount point.

23. A compound coupling according to claim 15 wherein said first flexure coupling comprises a pair of struts.

24. A compound coupling according to claim 15 wherein said first flexure coupling is a single sheet flexure.

25. A compound coupling according to claim 15 such that a triangle is defined by said structure mount point for said first flexure coupling, said structure mount point for said second flexure coupling, and said structure mount point for said third flexure coupling.

26. A compound coupling according to claim 25 wherein said triangle is equilateral.

27. A compound coupling according to claim 15 wherein said flexure coupling is taken from the group consisting of aluminum and stainless steel.

28. A compound coupling according to claim 15 wherein said first flexure coupling comprises:

(a) a first strut extending from said first component mount point to said structure mount point;

(b) a second strut extending from said second component mount point to said structure mount point; and

(c) a third strut extending from said first component mount point to said second component mount point.

29. A compound coupling for mounting a component having a first coefficient of thermal expansion (CTE) at a spatial position with respect to a support structure having a second CTE, the compound coupling comprising at least a first flexure coupling and a second flexure coupling, each said flexure coupling extending from said support structure to said component and:

- (a) attached to said support structure at a first and a second mount point associated with said flexure coupling;
- (b) attached to said component at a component mount point associated with said flexure coupling; and
- each said flexure coupling having a flexure CTE substantially equal to said second CTE.

30. A method for mounting a component having a first coefficient of thermal expansion (CTE) at a spatial position with respect to a support structure having a second CTE, the method comprising extending, from said support structure to said component a first flexure coupling, a second flexure coupling, and a third flexure coupling, by:

- (a) attaching said first flexure coupling between a first and a second mount point on said support structure and a first component mount point on said component;
- (b) attaching said second flexure coupling between a third and a fourth mount point on said support structure and a second component mount point on said component;
- (c) attaching said third flexure coupling between a fifth and a sixth mount point on said support structure and a third component mount point on said component; and
- each said flexure coupling having a flexure CTE substantially equal to said second CTE.

31. A method for mounting a component according to claim 30 wherein the step of attaching said first flexure coupling comprises the step of affixing a fastener.

32. A method for mounting a component according to claim 30 wherein the step of attaching said first flexure coupling comprises the step of applying an adhesive.

33. A method for mounting a component according to claim 30 wherein the step of attaching said first flexure coupling comprises the step of attaching a metal strut between said first mount point on said support structure and said first component mount point on said component.

34. A method for mounting a component having a first coefficient of thermal expansion (CTE) at a spatial position with respect to a support structure having a second CTE, the method comprising extending, from said support structure to said component a first flexure coupling, a second flexure coupling, and a third flexure coupling, by:

(a) attaching said first flexure coupling between a first and a second component mount point on said component and a first structure mount point on said support structure;

(b) attaching said second flexure coupling between a third and a fourth component mount point on said component and a second structure mount point on said support structure;

(c) attaching said third flexure coupling between a fifth and a sixth component mount point on said component and a third structure mount point on said support structure; and

each said flexure coupling having a flexure CTE substantially equal to said first CTE.

35. A method for mounting a flexure coupling between a first element having a first coefficient of thermal expansion (CTE) and a second element having a second CTE comprising:

(a) forming said flexure coupling from a material having said first CTE;

(b) attaching said flexure coupling to a first and a second mount point on said first element; and

(c) attaching said flexure coupling to a third mount point on said second element.

36. A method for mounting a flexure coupling according to claim 35 wherein said second element comprises a prism.

37. A method for mounting a flexure coupling between a first element having a first coefficient of thermal expansion (CTE) and a prism mount having a second CTE comprising:

(a) forming said flexure coupling from a material having said first CTE;

(b) attaching said flexure coupling to a first and a second mount point on said first element; and

(c) attaching said flexure coupling to a third mount point on said prism mount.